

**AMENDMENTS TO THE CLAIMS**

1-43. (Cancelled).

44. (Currently Amended) A method for detecting a biologically active substance by detecting intracellular translocation of a subunit of a component of an intracellular pathway affecting intracellular processes, which subunit exhibits a biological activity of the component, comprising:

- (a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,
- (b) incubating the cell or cells with a substance to be screened for biological function or biological effect, and
- (c) measuring the light emitted from the luminophore in the incubated cell or cells and determining the result or variation with respect to the emitted light from said luminophore, such variation being indicative of the translocation of the subunit in said cell or cells and said translocation being indicative that said substance to be screened is biologically active.

45. (Currently Amended) A method for detecting a biologically active substance by detecting intracellular translocation of a subunit of a component of an intracellular pathway affecting intracellular processes, which subunit exhibits a biological activity of the component, comprising:

- (a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,
- (b) incubating the cell or cells with a substance to be screened for biological function or biological effect, and
- (c) extracting quantitative information relating to the translocation of said subunit by recording variation in spatially distributed light emitted from said luminophore, such variation being indicative of the translocation of the subunit in said cell or cells and said translocation being indicative that said substance to be screened is biologically active.

46. (Currently Amended) A method for detecting a biologically active substance by detecting intracellular translocation of subunit of a biologically active polypeptide affecting intracellular processes, which subunit exhibits a biological activity of the polypeptide, comprising:

- a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,
- b) incubating the cell or cells with a substance to be screened for biological function or biological effect,
- c) measuring the light emitted by the luminophore in the incubated cell or cells and determining the result or variation with respect to the emitted light, such result or variation being

indicative of the translocation of the subunit in said cell or cells and said translocation being indicative that said substance to be screened is biologically active, and

d) measuring the effect of said substance on the inhibition/activation of enzymatic activity of said subunit.

47. (Previously Presented) A method according to claim 45, wherein the quantitative information relating to the translocation of the subunit is extracted from the recording or recordings according to a predetermined calibration.

48. (Previously Presented) A method according to claim 44, 45, or 46, wherein the substance to be screened for biological function or biological effect is a chemical substance.

49. (Previously Presented) A method according to claim 44, 45, or 46, wherein the substance is a substance whose affect on an intracellular pathway is to be determined.

50. (Previously Presented) A method according to claim 44, 45, or 46, wherein the intracellular pathway is an intracellular signaling pathway.

51. (Previously Presented) A method according claim 44, 45, or 46, wherein the luminophore is a fluorophore.

52. (Previously Presented) A method according to claim 44, 45, or 46, wherein the luminophore is a Green Fluorescent Protein (GFP).

53. (Previously Presented) A method according to claim 52, wherein the GFP is selected from the group of GFPs having the F64L mutation.

54. (Previously Presented) A method according to claim 52, wherein the GFP is a GFP variant selected from the group consisting of F64L-GFP, F64L-Y66H-GFP, F64L-S65T-GFP, and EGFP.